EXHIBIT 27

DECLARATION OFANDREW F. READ

I, Andrew F. Read, declare as follows:

1. I am the Senior Vice President for Research at The Pennsylvania State University (Penn State) in State College, PA. I have held that position since April 1, 2024. I previously served Penn State as Interim Senior Vice President for Research (July 1 2023-March 31, 2024), as Director of the Huck Institutes for Life Sciences (2019-2023), as Director of the Center for Infectious Disease Dynamics (2010-2018), as Evan Pugh University Professor of Biology and Entomology (2015-current), as Eberly Professor of Biotechnology (2015-2024), as Alumni Professor of Biological Sciences (2012-2014), and as Professor of Biology and Entomology since 2007.

2. I have personal knowledge of the contents of this declaration, or have knowledge of the matters based on my review of information and records gathered by Penn State personnel, and could testify thereto.

3. Penn State receives substantial annual funding from the National Science Foundation ("NSF"). During Fiscal Year 2024 (July 1, 2023 – June 30, 2024), Penn State reported NSF-funded research expenditures of $85,845,000. This included 5 cooperative agreements, 783 grants, and 103 subawards. This resulted in approximately $25M in indirect costs.

4. Penn State intends to apply for new funding awards, and/or renewals and continuations of existing funding awards, in the next year and in future years to come.

5. The funding Penn State receives from NSF supports critical and cutting-edge research vital to our nation's health, prosperity and security that also often has benefits for American businesses. Millions of Americans benefit from and depend on this research. For example:

a. **Innovative Materials**. 2D field expansion is a crucial aspect of next-generation microelectronics and semiconductors. Penn State's NSF supported 2-Dimensional Crystal Consortium: Materials Innovation Platform (2DCC-MIP) has made outstanding use of NSF support to establish a world-leading platform in the synthesis of 2D materials. The Platform has made major advances in the size and quality of 2D wafers that can be fabricated. This combination of capabilities represents a skillset that will be difficult to replicate elsewhere in the foreseeable future. The human and physical infrastructure built by 2DCC represents an essential national resource and provides a critical competitive advantage for the national research community as well as its microelectronics industry. Furthermore, the various knowledge outreach and user programs provide an important route to training the next generation of materials researchers in the US. 2D field expansion is a crucial aspect of next-generation microelectronics and semiconductors. NSF also funds materials research into atomic thin coatings that address issues including corrosion, oxidation and abrasion resistance, biofouling and scale formation, energy storage and energy harvesting, and friction and wear. This research also enables smaller and more powerful electronics, new kinds of sensors and actuators, and new technologies for biomedical devices, water purification, and catalysis.

b. **Artificial Intelligence (AI)**. NSF grants are helping Penn State researchers study the use of quantum computer-based AI to bring drugs to patients faster and more inexpensively. Quantum computers could cut down on costs associated with finding drugs, as well as shorten the time it takes these needed

treatments to reach patients. Unlike the traditional computational drug screening approaches that target libraries of billions of compounds, utilizing quantum computers along with novel AI-driven algorithms promises to cover a vastly larger chemical space. Creating drugs quickly and inexpensively means that lives will be saved. Funding from these grants could help to leverage quantum AI to design drug treatments that could inhibit the Ras family of proteins, which would be particularly important for cancer treatments and cures.

c. **Cybersecurity**. Penn State is a hub for cutting-edge cybersecurity research, with faculty across disciplines receiving substantial support from NSF. These projects span technical, human-centered, and interdisciplinary domains, addressing both foundational and applied challenges in securing digital systems and infrastructure. Industrial and societal applications for this research include

- *Telecommunications*: Secure 5G/6G protocols and mobile network infrastructure;
- *Automotive*: Safer human-machine collaboration in connected and autonomous vehicles;
- *IoT & Smart Devices*: Lightweight, secure communication for constrained environments;
- *Software & Systems*: Tools for vulnerability detection, automated patching, and secure software development;

- *Human-Centered Security*: Designing interfaces and alerts that align with human cognition and behavior;
- *Enterprise Cyber Defense*: Adaptive, AI-driven protection for cloud and data center environments.

Broader impacts include training students for cybersecurity roles in government and engaging undergraduates in machine learning and cybersecurity research.

6. Reimbursement of Penn State's indirect costs is essential for supporting this research. NSF's cutting of indirect cost rates to 15% would preclude carrying out the kinds of research projects described in paragraph 5 in the future.

7. Indirect costs include Penn State's ongoing investment in advanced research facilities and equipment. Recently constructed buildings such as the Animal, Veterinary and Biomedical Sciences Building and the Engineering Collaborative Research and Education Building house state-of-the-art research spaces including laboratories, clean rooms, and animal research facilities. The cost of maintaining research spaces throughout the university is a critical component of the indirect costs, including maintenance and repairs of laboratory infrastructure, utilities, and safety protocols including radiation safety and hazardous waste disposal. Indirect costs also include the university's investment in specialized research equipment that drives innovation, such as electron microscopes, mass spectrometers, and nuclear magnetic resonance spectrometers. Without this critical infrastructure, Penn State simply cannot conduct the research.

8. For example, with respect to the areas of research described in Paragraph 5:

a. **Innovative Materials**. Facilities at Penn State's Millennium Science Complex include a 9,500-square-foot clean room for nanofabrication, more than 70

instruments for characterization of 2D coatings, and a 2D materials lab dedicated to the synthesis of large-scale 2D materials. The 2DCC-MIP User Facilities include custom deposition tools with in situ and real-time characterization that enable fundamental studies of epitaxy, a bulk growth facility that produces high growth single crystal samples, a theory/simulation facility that provides computational materials science support emphasizing the simulation of growth kinetics, and related facilities.

b. **Artificial Intelligence (AI).** The Institute for Computational and Data Sciences (ICDS) provides a variety of services supporting AI research:

- The Center for Artificial Intelligence Foundations and Scientific Applications (CENSAI) aims to foster collaborative, interdisciplinary research across Penn State and beyond aimed at addressing the AI grand challenge of accelerating scientific progress across multiple areas of AI.
- AIMI at ICDS and Penn State connects businesses with cutting-edge AI/ML expertise to solve real-world problems and seize market opportunities. Serving both SMEs and large corporations, AIMI focuses on solutions that improve production, manufacturing, and services.
- The Center for Artificial Intelligence Foundations and Engineered Systems (CAFE) focuses on techniques to deploy efficient engineering and defense systems.

- The Center for Socially Responsible Artificial Intelligence aims to enhance interdisciplinary education, research, and outreach in artificial intelligence; its applications; and its impact on work and society.

c. **Cybersecurity**. The Cyber Security Lab at Penn State consists of a 1,200 square foot computer and network lab space. The lab has a virtualized enterprise network test-bed which consists of a high-end Gigabit VLAN switch, several Cisco routers and firewalls, LAN switches, and seven physical computers on which dozens of virtual machines are running.

9. Physical facilities costs are the largest component of indirect costs. This includes not only the usual costs of constructing and maintaining buildings where research occurs, but the very high costs of outfitting and maintaining specialized laboratory space, which can require special security, advanced HVAC systems, and specialized plumbing, electrical systems and waste management, as well as specialized laboratory equipment. At Penn State's University Park campus, these infrastructure needs are especially pronounced due to the presence of high-containment biosafety labs, nano-fabrication cleanrooms, high-performance computing facilities, and vivarium spaces. These research environments are not only essential to maintaining Penn State's leadership in science and engineering, but also to addressing pressing national priorities in health, energy, environment, and security. Developing and operating these spaces requires long-term financial commitment—costs historically supported in part through federal reimbursement of indirect costs. For example, the Penn State Nanofabrication Laboratory ("Nanofab") offers world-class capabilities in the areas of deposition, etch, lithography, material modification, and characterization. In addition to supporting cutting-edge science, the Nanofab serves the business

community by providing them access to state-of-the-art equipment and a highly skilled technical staff. Major projects include a 290,000-square-foot engineering research building to alleviate space constraints and expand research capacity, and a new interdisciplinary center designed to foster applied research and industry collaboration. These facilities are built to meet modern research demands and remain heavily reliant on predictable and adequate federal indirect cost recovery to support their long-term operation.

10. In addition, indirect costs fund the administration of awards, including staff who ensure compliance with a vast number of regulatory mandates from agencies such as NSF. These mandates serve many important functions, including ensuring research integrity, and the responsible conduct of research; protecting the welfare and safety of participants, research personnel and the environment; properly managing, securing, handling and disposing of chemical and biological agents and other materials used in research; managing and auditing funds in accordance with federal regulations; providing the high level of cybersecurity, data storage, and computing environments mandated for regulated data; ensuring compliance with specialized security protocols and safety standards; maintaining facility accreditation and equipment calibration to meet research quality and security standards; and reviewing and managing potential financial conflicts of interest in order to prevent bias in research. Along with having the competencies to manage these tasks, these staff often must have specialized education and training as well as other federal approvals needed to work on NSF projects.

11. Recovery of Penn State's indirect costs is based on fixed rates that have been audited and approved by the federal government and reflect the government's documented understanding of what it costs to conduct this cutting-edge research. Indirect costs include both a "facilities" and an "administrative" component (F&A). According to the Office of Naval Research

(Penn State's cognizant federal agency), the only way for Penn State to be fully reimbursed for the **administrative costs** associated with federally-mandated compliance activities (e.g., auditing, accounting, financial reporting, patent reporting, human subjects compliance, animal subjects compliance, biosafety, radioisotope compliance, export compliance, data security, etc,) would be to recover at 30% MTDC. Since the administrative portion of F&A is capped by the Uniform Guidance at 26%, Penn State already under-recovers the true cost of compliance. Reducing total F&A to 15% would mean that Penn State was only recovering half of the costs of federally mandated compliance activities. This would leave nothing to cover the costs associated with the maintenance of Penn State research facilities.

12. Through fiscal year 2025, the fixed indirect cost rate is 58.4% for on-campus research.

13. The effects of a reduction in the indirect cost rate to 15% would be devastating. Of the $85,845,000 in NSF research expenditures that Penn State reported in Fiscal Year 2024, approximately $25 million consisted of payment of indirect costs. Based on current trendlines, Penn State would expect to receive ~$64 million in direct costs and ~$25 million in indirect in FY2025. Based on historical funding levels, Penn State would expect to receive an average of $66.7 million/year from the NSF for direct costs and approximately $26.2M/year in indirect cost recovery. The significant reduction in this recovery would severely compromise our ability to maintain the research facilities and compliance infrastructure needed to support this critically important research.

14. If—contrary to what Penn State has negotiated with the federal government—the indirect cost rate were reduced to 15% for new awards, that would significantly reduce Penn State's anticipated annual indirect cost recovery by approximately $18.9M to about $6.6M. For example,

applying the 15% rate to the anticipated modified direct costs over the next five years, Penn State's anticipated annual indirect cost recovery would be reduced by an average of $19.4 million: from $26.2 million each year to $6.8 million a year.

15. This reduction would have deeply damaging effects on Penn State's ability to conduct research. Many of Penn State's current research projects will be forced to slow down or cease abruptly if we cannot continue to recover the full direct and indirect costs associated with supporting research. This will also necessarily and immediately result in staffing reductions across the board. For example:

a. The reduction in reimbursement of costs for the administrative personnel required to support safe, legal and compliant NSF-funded research would necessitate a corresponding reduction in staff. A reasonable estimate is that the University would be required to lay off about eighty individuals. This would significantly hamper our ability to continue with critical research projects, and in turn jeopardize our ability to contribute to the nation's health, security and prosperity. Moreover, recruiting staff who have the requisite knowledge and experience to work on such projects is already exceedingly difficult. Even if funding were later restored, it would be difficult to find qualified individuals willing and able to fill these positions. Ultimately, top scientists will not move to the University if we cannot provide the facilities, resources and talent necessary to conduct world-class research, and those already here may well leave the University or the country.

b. Penn State would have to halt or severely curtail plans to invest in and expand high-return facilities built or conceived for NSF-funded research. We would

also have to contract and in some cases close existing facilities. Our facilities and the proposed expansions support work in semiconductor innovation and manufacturing as well as electrical engineering advances in the United States. NSF indirect cost recovery also supports facilities that enable federal and industry sponsored research for crop and fertilizer enhancements, domestic and agricultural animal health, and next generation materials for medicines and biodevices.

c. Penn State's ability to support the Commonwealth of Pennsylvania's research needs will be severely curtailed by the steep cuts in federal support, undermining Penn State's mission as a Land Grant College.

d. Although NSF intends to dramatically reduce its investment in administrative support for university research, the regulatory compliance requirements to conduct NSF-funded work continue to grow. Penn State would not be able to accept grants involving controlled information, including CUI- and export-controlled projects, without adequate indirect recovery to hire and retain the skilled compliance experts necessary to create a safe environment for such work.

e. Current collaborating institutions may be unable to accept the limitation on indirect, resulting in early terminations and reduced opportunities to partner with top talent around the country.

16. Penn State has for decades relied on the payment of indirect costs. Until now, we have been able to rely on the well-established process for negotiating indirect cost rates with the government to inform our budgeting and planning. Operating budgets rely on an estimate of both

direct and indirect sponsored funding to plan for annual staffing needs (*e.g.*, post-docs, PhD students, and other research staff), infrastructure support (*e.g.*, IT networks, regulatory compliance, and grant management support), and facility and equipment purchases. In some cases, Penn State has long-term obligations and it relies on budgeted grant funding, including associated indirect cost recovery, to fulfill these commitments. This multi-year budgeting process also assumes the availability or possibility of grant renewals at roughly similar terms – and certainly at the negotiated indirect cost rate – as had been previously available.

17. In addition to the immediate effects and reliance interests described above, dramatically cutting indirect cost reimbursement would have longer-term effects that are both cumulative and cascading.

a. Economic Stability: Some research funding flows through to various economies through material, service, and personnel expenditures. Many of these research facilities are in rural areas and help contribute to local economies. Companies that support research functions would feel the economic impact, and the fast shift in reduced funding would not provide companies sufficient time to adapt.

b. Facility infrastructure development and maintenance: Constructing new and cutting-edge facilities ensures that U.S. universities remain ahead of the rest of the world in the development of new technologies. Maintaining existing equipment and facilities is vital to ensure Penn State's ability to maintain safety of research assets and avoid hazards to personnel and students.

c. Personnel Development: Penn State would fall behind in its ability to train the next generation of researchers. Universities in the U.S. would struggle to recruit

students without funding, facilities, and proper training. This could cause the United States to fall behind other countries in research and development.

d. Organizational Development/Operations: Continued workflow and process improvement efforts in administration and operations would suffer, leading to inefficiencies and vulnerabilities. Many researchers and staff could move on to new industries and not return to research. Some areas of research could be abandoned altogether.

18. Disruptions to Penn State's research will also have negative effects in the Central Pennsylvania area, the state of Pennsylvania, and the broader region. More than 34,000 Pennsylvania residents are directly employed by Penn State—and the University collaborates with state and local partners to help solve regional challenges through joint research and innovation. Penn State's research also fuels spending in the regional economy, including by driving discoveries that launch new ventures, attract private investment, and make a positive social impact. A massive reduction in Penn State's research budget would immediately and seriously jeopardize these contributions to the local region.

19. Finally, slowdowns or halts in research by Penn State and other American universities will allow competitor nations that are maintaining their investments in research to surpass the United States on this front, threatening both our Nation's national security and its economic dominance.

20. Penn State cannot cover the potential loss of NSF revenue with existing resources. While Penn State maintains an endowment, it is neither feasible nor sustainable for Penn State to use endowment funds or other revenue sources to offset shortfalls in indirect cost recovery:

a. The majority of Penn State's endowment—around 81%—is restricted to specific donor-designated purposes, such as scholarship programs, support for a new facility, or an endowed professorship. Penn State is not legally permitted to use those funds to cover research infrastructure costs.

b. Even the portion of the endowment that is unrestricted is subject to a carefully managed annual payout, typically around 5%, to ensure long-term financial stability for the institution.

21. It is also not feasible or sustainable for Penn State to use other revenue sources to offset shortfalls in indirect cost recovery. As a non-profit institution, Penn State reinvests nearly all of its revenue into mission-critical activities, leaving little margin to absorb unexpected funding gaps. In other words, unlike for-profit organizations, Penn State does not generate significant surpluses that could be redirected without affecting core academic priorities such as educational programs and financial aid support for students. Absorbing the cost of a lower indirect cost rate, even if it were possible, would create long-term budget pressures on Penn State—which would in turn force reductions in key investments supporting Penn State's faculty, students, staff, research, and teaching infrastructure, as well as other critical activities needed to maintain Penn State's academic excellence. Penn State cannot expect increased support from the Commonwealth of Pennsylvania to cover the shortfall in the cost of federally-sponsored research, and will not shift that cost to Penn State students by increasing tuition Therefore, even if Penn State could "cover" some of the indirect costs previously funded by NSF, it could do so only by negatively affecting other critical goals central to the institution's mission, including affordability and accessibility for Pennsylvania residents.

22. If Penn State can no longer apply for NSF grants because it is unable to accept the new indirect cost rate cap—a risk that would affect nearly all of our NSF grants—the harms described here would be exacerbated. That greater loss in funding from NSF would mean more significant cost-cutting measures would need to be adopted—and quickly. Penn State cannot cover all of the indirect costs it would likely lose coverage for, and it cannot support all of this work without NSF funding. Some research projects would need to be terminated altogether, and others would need to be scaled down or pared back significantly. The process of identifying these cuts would need to begin immediately, and layoffs, closures, and research pauses or contractions would follow soon thereafter. Cutting back on Penn State's research in fields such as innovative materials, artificial intelligence, and cybersecurity will also have long-term implications for national security and the American economy.

I declare under penalty of perjury that the foregoing is true and correct.

Executed on May 6, 2025, at State College, PA.

Andrew F. Read